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| **BBA 202: ENVIRONMENTAL SCIENCE** | |
| **Teaching Scheme** | **Examination Scheme** |
| Lectures: 1 hrs/Week | Class Test -6 Marks |
| Tutorials: 1 hr/Week | Teachers Assessment – 3 Marks  Attendance – 6 Marks |
| Credits: 2 | End Semester Exam – 50 marks |

# Course Objectives:

# The objective of this course is to facilitate understanding of the conceptual framework of environment and its applications in making it conducive for living.

# Course Outcomes:

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| CO1 | Environmental knowledge: Apply the knowledge of science, fundamentals of natural resources, and specialization to the solution of complex problems affecting the environment |
| CO 2 | Problem analysis: Identify, formulate, research literature, and analyze the impact of human activities and problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and environmental sciences. |
| CO 3 | Design/development of solutions: Design solutions for complex environmental issues and problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations. |
| CO4 | Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions |
| CO5 | Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern tools including prediction and modeling to complex activities with an understanding of the limitations to sustain life and ecosystem |
| CO6 | . The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice |

**Course Content -**

**Unit-1**

Definition, Scope & Importance, Need For Public Awareness- Environment definition, Eco system – Types & Factors of Ecosystem, Food chain, Food-web, Ecological pyramids, Laws of Thermodynamics, Energy flow, Trophic levels, Human activities – Food, Shelter, Economic and Socialsecurity. Effects of human activities on environment- Housing, Industry, Mining and Transportation activities

**Unit-2**

Natural Resources - Water Resources - Water borne diseases, Water induced diseases,. Mineral Resources, Forest Wealth, Material cycles- Carbon, Nitrogen and Water Cycle Energy – Different types of energy, Conventional and Non-Conventional sources – Hydro Electric, Fossil Fuel based, Nuclear, Solar, Biomass and Bio-gas. Hydrogen as an alternative future source of energy.

**Unit-3**

Environmental Pollution and their effects. Water pollution, Land pollution. Noise pollution, Public Health aspects, Air Pollution, Solid waste management.

**Unit-4**

Current Environmental Issues of Importance: Population Growth, prevention of AIDS & other communicative diseases, Climate Change and Global warming- Effects, Urbanization, Automobile pollution. Acid Rain, Ozone Layer depletion, Animal Husbandry.

**Unit-5**

Environmental Protection- Role of Government, Legal aspects, Initiatives by Non-governmental Organizations (NGO), Environmental Education, Women Education. Abuses of Child Labor

**Unit-6**

Collection of data regarding incineration plants in Govt. & Private hospitals of the region. Project Reports- Air pollution area, water pollution area, noise pollution area, land pollution area. Projects regarding alternatives of fossil fuel.

**Text and Reference Books-**

1. Environmental Studies , Benny Joseph; Tata McgrawHill,2005
2. Environmental Studies, Dr. D.L. Manjunath; Pearson Education-2006
3. Environmental studies, R. Rajagopalan; Oxford Publication – 2005
4. Text book of Environmental Science & Technology, M. Anji Reddy, BS Publication.